



metals



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Mechanical Properties, Fatigue and Fracture of Metallic Materials

Guest Editor:

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Deadline for manuscript
submissions:

closed (10 August 2025)

Message from the Guest Editor

Dear Colleagues,

This Special Issue will bring together papers focusing on various aspects of the mechanical properties, fatigue and fracture of metals and metallic alloys to facilitate the dissemination of recent advances in the field. We welcome papers relating to all aspects of the mechanical properties, fatigue and fracture behavior of metals and alloys, including, but not limited to, the following topics: novel experimental testing and numerical methods to characterize fatigue crack formation and multistage growth; mechanisms and growth of fatigue cracks from defects; new multiaxial fatigue life prediction methodologies; new methods for notch root analysis; size and gradient effects; prediction of scatter in fatigue behavior of materials due to variability in material microstructure and service conditions; mechanisms of micro- and macrofractures in advanced materials; designs that minimize fatigue damage and failure; multiscale constitutive modeling to simulate fatigue and fracture evolution; high-temperature deformation; techniques to characterize and predict creep fatigue–oxidation interactions; and other topics relating to the failure behavior of metals and alloys.



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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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